CLAIMS

1. An antenna comprising a plurality of antenna elements, the antenna being operable with sets of the antenna elements organised into first order groups and with sets of first order groups organised into sets of second order groups.

2. An antenna according to claim 1, wherein the organisation of antenna elements into first order groups is fixed.

3. An antenna according to claim 1 or claim 2, further comprising a controller operable to reconfigure dynamically the organisation of first order groups into second order groups.

4. An antenna according to any preceding claim, further comprising a first beam forming network operable to receive signals from the antenna elements and/or operable to transmit signals to the antenna elements, wherein the first beam forming network comprises a local network for manipulating signals received by or to be transmitted by an antenna element and a remote network for manipulating the signals received from or to be transmitted to a plurality of the local networks.

5. An antenna according to claim 4, wherein the signals from the antenna elements of a first order group are combined within the local network before transmission to the remote network or a signal from the remote network is separated within the local network for transmission to the antenna elements of a first order group.

6. An antenna according to any preceding claim, wherein the local network is operable with RF signals.

7. An antenna according to claim 6, wherein the remote network is operable with optical frequency signals.

8. An antenna according to claim 7, wherein the local network is operable to upconvert an RF signal to an optical frequency signal prior to transmission to the remote network.

9. An antenna according to claim 7 or claim 8, wherein the remote network is operable to digitise a signal received from the local network.

10. An antenna according to any of claims 7 to 9, wherein the remote network is operable to provide true time delay.

11. An antenna according to any preceding claim, wherein an antenna element is operable with two polarisations.

12. An antenna according to claim 11, wherein the polarisations are mutually orthogonal.

13. An antenna according to any preceding claim, wherein each second order group is provided with its own receiver.

14. An antenna according to any preceding claim, further comprising at least one group of antenna elements for use in ESM analysis mode.

15. An antenna according to claim 14, further comprising a second beam-forming network operable to receive signals from the antenna elements of the at least one group of antenna elements for use in ESM analysis mode.

16. An antenna according to claim 15, wherein the second beam-forming network comprises a local network and a remote network.

17. An antenna according to any preceding claim, further comprising ESM elements for transmission of ESM signals.

18 An antenna system comprising a plurality of antennas according to any preceding claim.

19. A platform comprising an antenna according to any of claims 1 to 17.

20. A platform according to claim 19, wherein the platform is an airborne vehicle, ship or boat.

21. An antenna substantially as described herein with reference to any of Figures 1 to 5.

22. An antenna system substantially as described herein with reference to any of Figures 1 to 5.